REMARKS AND ARGUMENTS

1.   Summary of the Office Action

In the Office action mailed May 4, 2004, the Examiner rejected claims 9, 14-17, 19, and 20 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,134,283 (Sands et al.). The Examiner objected to claims 10-13 and 18 as being dependent upon a rejected base claim, but indicated that claims 10-13 and 18 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The Examiner allowed claims 1-8.

2.   Amendments and Pending Claims

Applicants have amended independent claims 10, 14, and 18 and have cancelled claims 9, 16, and 17. Now pending in this application are claims 1-8, 10-15, and 18-20 of which claims 1, 10, and 14 are independent, and the remainder are dependent.

As noted above, the Examiner indicated claims 10-13 would be allowable if rewritten to include all of the limitations of the base claim and any intervening claims. Applicants submit that by rewriting claim 10 to include all of the limitations of claim 9, claims 10-13 are now in condition for allowance. Applicants respectfully request that Examiner allow claims 10-13.

3.   Response to §102 Rejections

As noted above, the Examiner rejected claims 9, 14-17, 19, and 20 under 35 U.S.C. § 102(e) as being anticipated by Sands et al. The Applicants respectfully traverse the anticipation rejection of pending claims 14, 15, 17, 19, and 20 because Sands does not disclose or suggest each and every element as recited in any of these claims.

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a. The Sands et al. Reference

Sands et al. discloses a method of synchronizing a time-division duplexed transceiver by comparing the energy value of each received frame and analyzing the fluctuations in the energy values to determine when a superframe begins. Any gradual increases in the energy values are indicative of a misalignment. After determining when a superframe begins, an alignment error estimate can be determined and used to adjust the superframe boundary in accordance with the alignment error estimate. Any summations over a superframe are merely averaging the single value power measurements of each frame as shown in Figures 10A and 10B.

b. The Claimed Invention

The present invention recognizes that the position of a synchronization symbol of a superframe received by a modem may be used to align a plurality of modems. A synchronization symbol is used to establish boundaries between superframes. A superframe boundary indicates the symbol position of a synchronization symbol. A method of identifying a superframe boundary involves (i) summing data vectors for each symbol time period in a superframe, (ii) determining the summed data vector with the largest magnitude, and (iii) indicating the superframe boundary at the symbol position correlating to the largest summed data vector.

The Applicants' independent claim 14 was amended to include the limitations of claims 16 and 17. Claim 14 is directed to a communication system that comprises a synchronizer for identifying the position of a superframe boundary, wherein the synchronizer determines the position of a synchronization symbol of the superframes by comparing the summed data vector of each symbol time period.

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Sands et al. does not disclose or suggest all of the elements in claim 14. In particular, Sands et al. does not disclose or suggest a synchronizer that compares a summed data vector of each symbol time period to determine the position of a synchronization symbol of the superframes.

In rejecting claim 17, the Examiner asserted that Sands et al. discloses (i) summing the vectors in each frame by summing the energy values of time-domain samples in each frame, and (ii) comparing the summed vector value, and cited Sands et al. Col. 13, Lines 13-24 and Figures 9A, 9B, 10A, and 10B in support. However, as noted above, Sands et al. discloses comparing energy values of each frame and energy value fluctuations for frames received at a transceiver to determine where a superframe begins. Applicants submit that determining a power value of a single frame is not a vector addition. The particular sections of Sands et al. cited by the Examiner or any other part of Sands et al. do not disclose or suggest a synchronizer that compares a summed data vector of each symbol time period of the plurality of superframes to determine the position of a synchronization symbol of the superframes, as claimed in claim 14.
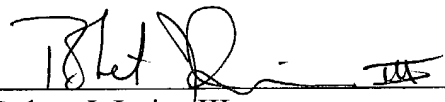
Because Sands et al. does not teach or suggest each and every element of independent claim 14, Sands et al. fails to anticipate claim 14 under 35 U.S.C. §102(e). Further, because each of claims 15 and 18-20 depend from claim 14, Sands et al. necessarily fails to anticipate claims 15 and 18-20 as well.

4.   Conclusion

In view of the foregoing amendments and remarks, Applicants respectfully submit that all of the presently pending claims in the application are believed to be in condition for allowance.   Applicants hereby earnestly solicit an early Notice of Allowance. The Examiner is invited to call the undersigned if the Examiner believes it would be helpful towards moving the case to issuance or resolving any further issues.

Respectfully submitted,

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